

# **MCCS, Inc.**

**Computer Programming, Consulting, & Data Collection  
Systems**

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**[www.mccsinc.com](http://www.mccsinc.com)**

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### What is RFID?

- Radio Frequency Identification, the next evolution in data carrier technology

### Current ADC Technologies

- Bar Code
- Active RFID
- Passive RFID
- Magnetic Strip
- Memory Button



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### **Advantages**

- Efficiency, Easy to Use, Training
- Increased Accuracy
- 3D Technology, Using Radio Waves the Tag Need Not be Physically “Seen” by the Reader

### **Modes of Operation**

- Real-time Through Wireless Networking
- Batch

### **Modular, Non-Intrusive Connection to Existing Data**

- Handheld Terminals
- Fixed Reader (Portals)
- Data Storage Capabilities
- Introduction of Logic



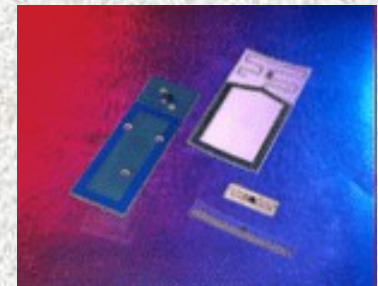
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## Basic RFID System Components

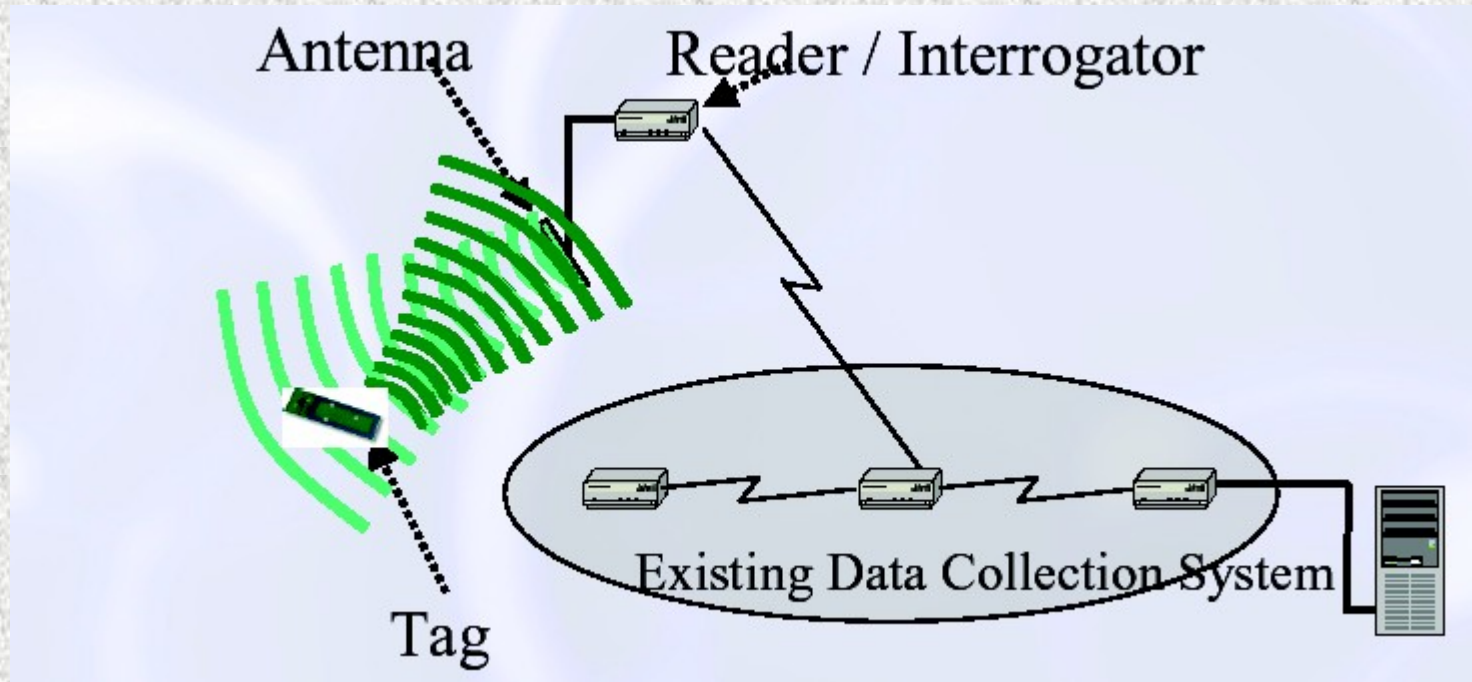
- Reader/ Writer (Interrogator)
  - Tag (Transponder)
  - “Over the Air” Protocol
- Host Computer—Controls RFID System
  - (Tags, Readers and Data Communications)



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### How RFID Works

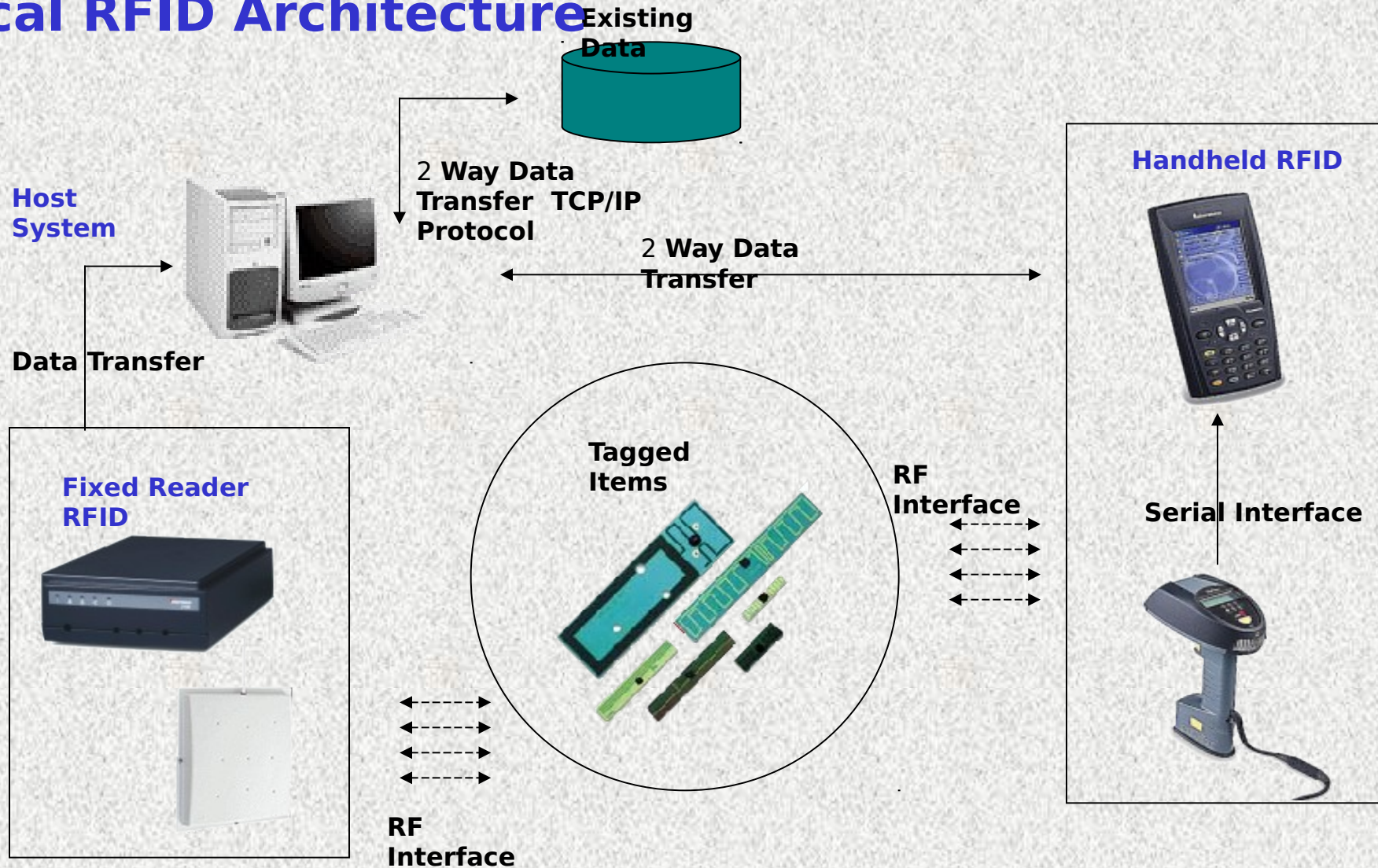


- Asset contains an RF Tag/Label instead of (or with) a barcode label
- Interrogator “scans” the Tag for information using RFID

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### Typical RFID Architecture





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### Types of Interrogators

- Network Reader
- Serial Reader
- Handheld
- Integrated Handheld
- Forklift Mounted



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### Selecting The Right Tag

- Tag choice is dictated by many factors associated with the application
- The main considerations will be:
  - Active vs. battery assisted vs. passive, Frequency, Form factor

### Basic Tag Types

- Active Tags (Class 4)
  - Battery powered memory, radio & circuitry, High Read Range, \$\$  
\$
- Battery Assisted (Class 3)
  - Reader activates tag, but battery powers memory and circuitry, Medium Read Range, \$\$
- Passive Backscatter (Class 1 & 2)
  - Reader powered, - Shorter Read Range, \$



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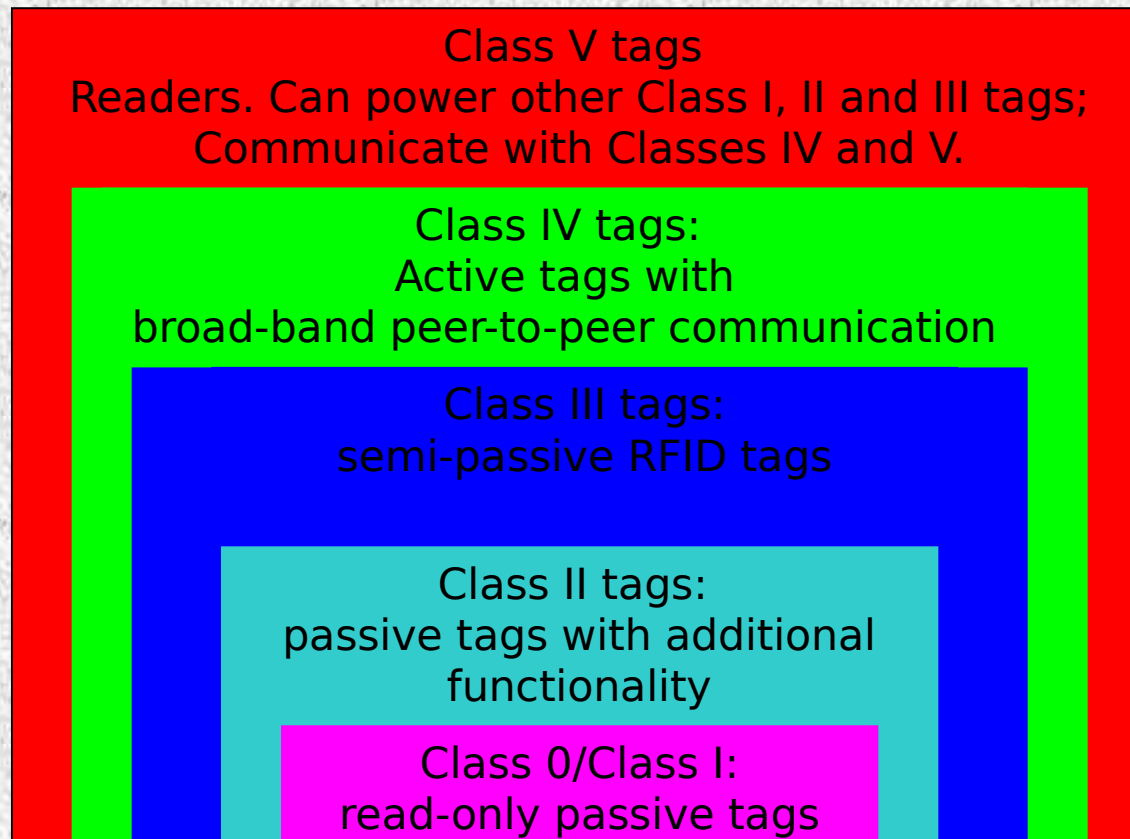
### Other Advantages of RFID

- Interrogator may read any field or memory location on tag
- A grouping of tags can be selected based on field values
- Write new or additional information to tag (depending on privileges or process requirements) promoting tag reuse
- Multiple tags can be identified/read at once
- UHF passive tags will comply with new Walmart and DOD initiatives

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### Conceptual Layers





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### Typical Configurations

- **Portal Configuration**
  - **Warehouse Dock Doors**
  - **Conveyors**
  - **Personnel Doors**
- **Handheld Configuration**
  - **Warehousemen**
  - **Production: Work In Process**
  - **Property Tracking**
- **Conveyer Belts**
  - **Baggage Tracking**





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### Markets/Applications

- Inventory Control
  - **Receipt, Induction, Shipping**
- Property Tracking/Accountability
  - **Computers, Office Equipment, Vehicles**
- Factory Automation
- Authentication
  - **Security, Healthcare**
- Airline Industry
  - **Baggage Tracking**
- Transportation
  - **Hazardous Material Identification, Bills Of Lading**



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### RFID Hardware Costs, DPAS RFID Solutions

- RFID Tags
  - Pre-Coded w/DPAS Data, Bar Code Label, Self-Adhesive
    - 5000 - \$2.72 / Tag
    - 10,000 - \$2.62 / Tag
    - 50,000 - \$2.38 / Tag
    - 100,000 - \$2.31 / Tag
    - 1,000,000 - \$1.68 / Tag
- Handheld Kits
  - IP3 Integrated RFID Scanner, Fits Intermec 750 Computer
    - \$1570.00 (Includes Reader, Charger, Extra Battery)
  - 1555 Serial Tethered RFID Reader, Fits All Intermec 700 Series Computers And Intermec 24xx Handheld Terminals
    - \$3285.00 (Includes Reader, Extra Battery, Connecting Cable)





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### RFID Hardware Costs, DPAS RFID Solutions (Cont.)

- RFID Portals
  - Fixed Ethernet Reader, Multiple Antenna Configuration
    - \$3865.00 (Prices may vary with antenna selection, and mounting hardware)





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**Questions?**

**Closing Remarks**